VASCULAR IMAGES

Aortoduodenal fistula after endovascular aneurysm repair presenting with aneurysm sac abscess

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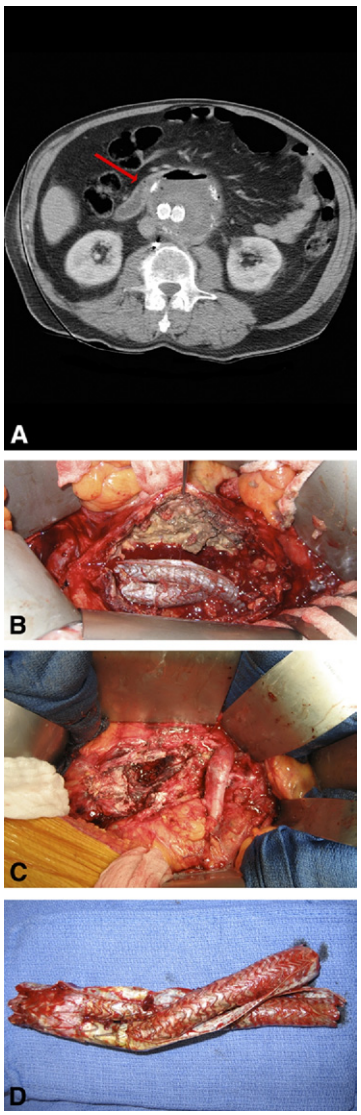
We report a 69-year-old man who underwent an uneventful endovascular repair of a 10-cm infrarenal abdominal aortic aneurysm (AAA) using a Gore Excluder endoprosthesis (W.L. Gore and Associates, Flagstaff, Ariz). There was no preoperative evidence of an inflammatory or mycotic aneurysm. An interval computed tomography (CT) scan performed 3 months postoperatively showed mild perigraft stranding with no evidence of endoleak.

The patient returned 6 months after endograft implantation with fevers, chills, lethargy, and diarrhea, but without anemia or gastrointestinal bleeding. A repeat CT scan showed massive amounts of air around the endograft and within the aneurysm sac (Cover), which raised suspicion for an aortoduodenal fistula (ADF) due to the large amount of air and proximity of the duodenum (**A**, *red arrow*).

Operative exploration revealed a paraprosthetic ADF with gross suppuration within the aneurysm sac, without disruption of the proximal and distal endograft attachment sites **(B)**. Treatment included extra-anatomic axillobifemoral bypass, endograft explantation, aneurysm sac débridement, and duodenal repair with omental interposition **(C)**.

Intraoperative cultures from the endograft grew *Bacteroides fragilis* and *Actinomyces israelii* **(D)**. After a 2-week hospital course, the patient was discharged home on suppressive antibiotics.



DISCUSSION

Secondary ADF are a rare consequence of previous aortic surgery, and occur after 0.5% to 1.5% of cases.[1] The incidence of ADF after endovascular aneurysm repair (EVAR) is not known, and only 12 cases have been previously reported.[2] Etiologic factors postulated in their occurrence include (1) continued endoleak with pressurization of the aneurysm sac, (2) barb penetration of the aortic neck, (3) graft migration with stent kinking or fracture, and (4) pre-existing periaortic inflammation, including inflammatory or mycotic aneurysm and Crohn's disease.

We have previously reported the use of endovascular repair for the *treatment* of aortoesophageal fistula (AEF) in a high-risk patient.[3] Here we report the opposite situation of a previously repaired AAA, treated with endovascular repair, presenting with a secondary AEF. The explanation for this occurrence is not clear, because the patient had no evidence of a pre-existing inflammatory process, endoleak, or graft migration. No endograft disruption, disintegration, or gastrointestinal bleeding was

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noted. The large size of the aneurysm and the unusual bacteriology may have played contributing roles in this rare complication. This case demonstrates that air in the aortic aneurysm sac on CT scan after EVAR could indicate ADF.

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